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| 09/976,912 | 05/14/2002 | Michael O'Connor | 42390.P3674R | 1765 |
| 8791 7590 09/28/2007 BLAKELY SOKOLOFF TAYLOR & ZAFMAN 1279 OAKMEAD PARKWAY SUNNYVALE, CA 94085-4040 | | | EXAMINER VORTMAN, ANATOLY | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | | |
|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 09/976,912 | | O'CONNOR ET AL. | |
| | Examiner | | Art Unit | |
| | Anatoly Vortman | | 2835 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2007 (Amendment after final).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32, 35-42, 45-48 and 52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32, 35-42, 45-48 and 52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Reissue Application

Amendment

1. In view of the arguments presented in the Response After Final of 09/10/07, PROSECUTION IS HEREBY REOPENED. The finality of the previous final Office action is hereby withdrawn and new final Office action, presenting new grounds of rejection of claims 4, 11, 23, 30, and 40, is set forth below. The finality is appropriate, because all independent claims of record 1, 9, 16, 19, 20, 28, 35, 36, 37, 45, and 52 have been amended by Amendment filed on 06/20/05. Claims 33, 34, 43, 44, and 49-51 have been previously cancelled. In addition, claims 19, 36, and 52 have been amended to correct minor informalities by amendment of 09/10/07. Thus, claims 1-32, 35-42, 45-48, and 52, are pending in the instant application. The Office action follows:

Claim Rejections - 35 USC § 102/103

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who

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has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5-7, 9, 10, 12-14, 16-22, 24-29, 31, 32, 35-37, 39, 41, 42, 45-48 and 52, are rejected under 35 U.S.C. 102(e) as being anticipated by US/5,583,316 to Kitahara et al. (Kitahara) or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kitahara taken alone, or in combination with either JP/9-191440, GB/2,293,446 to Lee, or US/5,398,748 to Yamaji et al (Yamaji).

Regarding claim 1, 2, and 7, Kitahara disclosed (Fig. 45, 49, 50(A), 50(B)) an apparatus removing heat from a heat generating component (integrated circuit) (1), said apparatus comprising: a heat pipe (55) comprising an evaporator portion and a condenser portion, said heat generating component (1) being thermally coupled to said evaporator portion; an air duct comprising a housing (formed by members (2) and (3)) having internal fins (4) (column 23, lines 41-43) and a clamp (56), said air duct directing an air flow from an inlet port located near the center of said air duct (opening of the fan (3)) to first and second exit ports located at opposite

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end portions of said air duct (any openings between fins (4), including ones located at opposite end portions of the air duct, would constitute the exit port, since cooling air will be exiting between said fins), said condenser portion of said heat pipe (55) being attached to said housing via said clamp (56), and an air flow generator (3) (a fan) coupled to said inlet port for producing said air flow.

Alternatively, using clamps to mount pipes (heat pipes in particular) was a well-known technique at the time of the invention (see, for example Yamaji's Fig. 1, 2, and 13 to 17, Lee, Fig. 1, and JP/9-191,440, Fig. 1 to 3, which show conventionality of using clamps to mount heat pipes).

Therefore, even if to assume, *arguendo*, that said element (56) is not a clamp (which it is), than it would have been obvious to one of ordinary skill in the cooling art at the time of the invention to use a clamp to mount the heat pipe of Kitahara, since applying the aforementioned known technique to the Kitahara's device would have yield predictable results (i.e. reliable interconnection and improved thermal transfer) and would have been be obvious to a person of ordinary skill in the cooling art to try with reasonable expectation of success. *KSR v. Teleflex*, 550 U.S. ___, 127 S. Ct. 1727 (2007).

Regarding claim 9, 10, and 14, Kitahara disclosed (Fig. 45, 49, 50(A), 50(B)) an apparatus cooling an integrated circuit package assembly (1) located within a portable computer chassis (column 1, lines 15+), said apparatus comprising: a heat exchanger comprising: an air duct having a thin cross-section relative to the width of said duct, said air duct comprising a housing (formed by members (2) and (3)) having first and second major internal surfaces (inner surfaces of members (2) and (3)), an array of fins (4) disposed between said first and second

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surfaces (column 23, lines 41-43) and protruding from said second surface (Fig. 45), and a clamp (56), said housing further comprising an inlet port disposed at or near a center portion of said air duct (opening of the fan (3)) and first and second exit ports disposed at respective opposite first and second end portions of said duct (any openings between fins (4), including ones located at opposite end portions of the air duct, would constitute the exit port, since cooling air will be exiting between said fins); and an air flow generator (3) (a fan) coupled to said inlet port for producing a first and a second air flow (inherently), said first air flow being directed from said inlet port to said first exit port, said second air flow being directed from said inlet port to said second exit port (inherently); a heat pipe (55) having an evaporator portion and a condenser portion, said integrated circuit package (1) being thermally coupled to said evaporator portion; said condenser portion being coupled to said housing of said air duct via the clamp (56).

Alternatively, using clamps to mount pipes (heat pipes in particular) was a well-known technique at the time of the invention (see, for example Yamaji's Fig. 1, 2, and 13 to 17, Lee, Fig. 1, and JP/9-191,440, Fig. 1 to 3, which show conventionality of using clamps to mount heat pipes).

Therefore, even if to assume, *arguendo*, that said element (56) is not a clamp (which it is), than it would have been obvious to one of ordinary skill in the cooling art at the time of the invention to use a clamp to mount the heat pipe of Kitahara, since applying the aforementioned known technique to the Kitahara's device would have yield predictable results (i.e. reliable interconnection and improved thermal transfer) and would have been be obvious to a person of ordinary skill in the cooling art to try with reasonable expectation of success. *KSR v. Teleflex*, 550 U.S. ___, 127 S. Ct. 1727 (2007).

Regarding claim 16, Kitahara disclosed (Fig. 45, 49, 50(A), 50(B)) a portable computer (column 1, line 15+) comprising: an enclosure having an air duct comprising a housing (formed by members (2) and (3)) having internal fins (4) (column 23, lines 41-43), and a clamp (56), said air duct directing an air flow from an inlet port located near the center of said air duct (opening of the fan (3)) to first and second exit ports located adjacent opposite end portions of said air duct (any openings between fins (4), including ones located at opposite end portions of the air duct, would constitute the exit port, since cooling air will be exiting between said fins), said air duct having a substantially equal width as said enclosure, said enclosure comprising first, second and third sides (inherently); an air flow generator (3) coupled to said inlet port for producing said air flow; and heat transfer means (55) thermally coupling a heat generating component (1) located within said enclosure to said air duct housing, said heat transfer means (55) being coupled to said housing of said air duct via the clamp (56).

Alternatively, using clamps to mount pipes (heat pipes in particular) was a well-known technique at the time of the invention (see, for example Yamaji's Fig. 1, 2, and 13 to 17, Lee, Fig. 1, and JP/9-191,440, Fig. 1 to 3, which show conventionality of using clamps to mount heat pipes).

Therefore, even if to assume, *arguendo*, that said element (56) is not a clamp (which it is), than it would have been obvious to one of ordinary skill in the cooling art at the time of the invention to use a clamp to mount the heat pipe of Kitahara, since applying the aforementioned known technique to the Kitahara's device would have yield predictable results (i.e. reliable interconnection and improved thermal transfer) and would have been be obvious to a person of

ordinary skill in the cooling art to try with reasonable expectation of success. *KSR v. Teleflex*, 550 U.S. ___, 127 S. Ct. 1727 (2007).

Regarding claims 17 and 18, Kitahara disclosed (Fig. 50 (A) (B)) that said exit ports are positioned on at least three sides of the enclosure (any openings between fins (4), would constitute the exit port, since the cooling air would be exiting between said fins (4)).

Regarding claims 20, 21, and 26, Kitahara disclosed (Fig. 45, 49, 50(A), 50(B)) an apparatus comprising: a heat pipe (55) comprising an evaporator portion and a condenser portion, said heat pipe (55) coupled to a heat generating component (integrated circuit) (1) at the evaporator portion of the heat pipe (55); an air duct comprising a housing (formed by members (2) and (3)), said air duct directing an air flow from an inlet port, located at or near a middle of the air duct (an opening of the fan (3)), to a first and second exit ports located at opposite ends of the air duct (any openings between fins (4), including ones located at opposite end portions of the air duct, would constitute the exit port), said air duct coupled to the condenser portion of said heat pipe (55) via a clamp (56) mounted on the housing; and an air flow generator (3) (a fan) coupled to said inlet port to produce the air flow.

Alternatively, using clamps to mount pipes (heat pipes in particular) was a well-known technique at the time of the invention (see, for example Yamaji's Fig. 1, 2, and 13 to 17, Lee, Fig. 1, and JP/9-191,440, Fig. 1 to 3, which show conventionality of using clamps to mount heat pipes).

Therefore, even if to assume, *arguendo*, that said element (56) is not a clamp (which it is), than it would have been obvious to one of ordinary skill in the cooling art at the time of the invention to use a clamp to mount the heat pipe of Kitahara, since applying the aforementioned

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known technique to the Kitahara's device would have yield predictable results (i.e. reliable interconnection and improved thermal transfer) and would have been be obvious to a person of ordinary skill in the cooling art to try with reasonable expectation of success. *KSR v. Teleflex*, 550 U.S. ___, 127 S. Ct. 1727 (2007).

Regarding claim 28, Kitahara disclosed (Fig. 45, 49, 50(A), 50(B)), a heat exchanger comprising: an air duct having a housing (formed by members (2) and (3)) including an inlet port located at or near a middle of the air duct (opening of the fan (3)), a clamp (56) and a first and second opposing exit ports (any openings between fins (4), including ones located at opposite end portions of the air duct, would constitute the exit port, since cooling air will be exiting between said fins); an air flow generator (3) (a fan) coupled to the inlet port to produce an air flow, the air flow being directed from the inlet port to the exit port; a heat pipe (55) having an evaporator portion and a condenser portion, the evaporator portion coupled to an integrated circuit package (1), and the condenser portion being coupled to the air duct via the clamp (56).

Alternatively, using clamps to mount pipes (heat pipes in particular) was a well-known technique at the time of the invention (see, for example Yamaji's Fig. 1, 2, and 13 to 17, Lee, Fig. 1, and JP/9-191,440, Fig. 1 to 3, which show conventionality of using clamps to mount heat pipes).

Therefore, even if to assume, *arguendo*, that said element (56) is not a clamp (which it is), than it would have been obvious to one of ordinary skill in the cooling art at the time of the invention to use a clamp to mount the heat pipe of Kitahara, since applying the aforementioned known technique to the Kitahara's device would have yield predictable results (i.e. reliable interconnection and improved thermal transfer) and would have been be obvious to a person of

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ordinary skill in the cooling art to try with reasonable expectation of success. *KSR v. Teleflex*, 550 U.S. ___, 127 S. Ct. 1727 (2007).

Regarding claim 35, Kitahara disclosed (Fig. 45, 49, 50(A), 50(B)) a system comprising: an air duct housing (formed by members (2) and (3)) having an inlet port located at or near a middle of the air duct (opening of the fan (3)), a clamp (56) and a first and second exit port located at opposite ends of the air duct (any openings between fins (4), including ones located at opposite end portions of the air duct, would constitute the exit port, since cooling air will be exiting between said fins); an air flow generator (3) (a fan) coupled to the inlet port to produce an air flow; and heat pipe (55) coupling a heat generating component (1) to the air duct housing via the clamp (56).

Alternatively, using clamps to mount pipes (heat pipes in particular) was a well-known technique at the time of the invention (see, for example Yamaji's Fig. 1, 2, and 13 to 17, Lee, Fig. 1, and JP/9-191,440, Fig. 1 to 3, which show conventionality of using clamps to mount heat pipes).

Therefore, even if to assume, *arguendo*, that said element (56) is not a clamp (which it is), than it would have been obvious to one of ordinary skill in the cooling art at the time of the invention to use a clamp to mount the heat pipe of Kitahara, since applying the aforementioned known technique to the Kitahara's device would have yield predictable results (i.e. reliable interconnection and improved thermal transfer) and would have been be obvious to a person of ordinary skill in the cooling art to try with reasonable expectation of success. *KSR v. Teleflex*, 550 U.S. ___, 127 S. Ct. 1727 (2007).

Regarding claim 37 and 38, Kitahara disclosed (Fig. 45, 49, 50(A), 50(B)) an apparatus comprising: a heat pipe (55) to be coupled to a heat generating component (integrated circuit) (1); an air duct comprising a housing (formed by members (2) and (3)) having internal fins (4) (column 23, lines 41-43), said air duct directing an air flow from an inlet port positioned at a central point of the air duct (opening of the fan (3)), to first and second exit ports located at opposite end portions of said air duct (any openings between fins (4), including ones located at opposite end portions of the air duct, would constitute the exit port, since cooling air will be exiting between said fins), the housing coupled to the heat pipe via a clamp (56); and an air flow generator (3) (a fan) coupled to the inlet port to produce air flow.

Alternatively, using clamps to mount pipes (heat pipes in particular) was a well-known technique at the time of the invention (see, for example Yamaji's Fig. 1, 2, and 13 to 17, Lee, Fig. 1, and JP/9-191,440, Fig. 1 to 3, which show conventionality of using clamps to mount heat pipes).

Therefore, even if to assume, *arguendo*, that said element (56) is not a clamp (which it is), than it would have been obvious to one of ordinary skill in the cooling art at the time of the invention to use a clamp to mount the heat pipe of Kitahara, since applying the aforementioned known technique to the Kitahara's device would have yield predictable results (i.e. reliable interconnection and improved thermal transfer) and would have been be obvious to a person of ordinary skill in the cooling art to try with reasonable expectation of success. *KSR v. Teleflex*, 550 U.S. ___, 127 S. Ct. 1727 (2007).

Regarding claim 45, Kitahara disclosed (Fig. 45, 49, 50(A), 50(B)) a heat exchanger comprising: an air duct (formed by members (2) and (3)) having an inlet port situated at a central

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point of the air duct (opening of the fan (3)), first and second exit ports disposed at respective opposite first and second end portions of said duct (any openings between fins (4), including ones located at opposite end portions of the air duct, would constitute the exit port, since cooling air will be exiting between said fins), and a clamp (56); and an air flow generator (3) (a fan) coupled to said inlet port to produce a first and a second air flow, said first air flow being directed from said inlet port to said first exit port, said second air flow being directed from said inlet port to said second exit port (inherently); a heat pipe (55) coupled to the housing of the air duct via the clamp (56).

Alternatively, using clamps to mount pipes (heat pipes in particular) was a well-known technique at the time of the invention (see, for example Yamaji's Fig. 1, 2, and 13 to 17, Lee, Fig. 1, and JP/9-191,440, Fig. 1 to 3, which show conventionality of using clamps to mount heat pipes).

Therefore, even if to assume, *arguendo*, that said element (56) is not a clamp (which it is), than it would have been obvious to one of ordinary skill in the cooling art at the time of the invention to use a clamp to mount the heat pipe of Kitahara, since applying the aforementioned known technique to the Kitahara's device would have yield predictable results (i.e. reliable interconnection and improved thermal transfer) and would have been be obvious to a person of ordinary skill in the cooling art to try with reasonable expectation of success. *KSR v. Teleflex*, 550 U.S. ___, 127 S. Ct. 1727 (2007).

Regarding claim 46, Kitahara disclosed (Fig. 50) that the air duct include fins (4) protruding along a first internal surface (column 23, lines 40-45).

Regarding method claims 19, 36, and 52, the method steps recited in the claims are inherently necessitated by the device structure as taught by Kitahara.

Regarding claims 3, 22, 29, and 39, Kitahara disclosed (Fig. 45) that the housing includes a first plate (2) and a second plate (formed by horizontal surface of member (3), see Fig. 49) having respective first and second internal surfaces (inherently), the first internal surface having a first array of protruding members (4) that constitute internal fins (column 23, lines 40-45).

Regarding claims 5, 6, 12, 13, 24, 25, 31, 32, 41, 42, 47, and 48, Kitahara disclosed that the housing comprising a material with high thermal conductivity (aluminum) (column 2, line 28).

7. Claims 4, 11, 23, 30, and 40, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitahara taken alone.

Regarding claims 4, 11, 23, 30, and 40, Kitahara (regarding the embodiment depicted on Fig. 49, 50) disclosed all, including that the first internal surface (of said first plate (2)) having a first array of integrally formed protruding members (fins (4), col. 23, lines 40-45), but did not disclose that the second internal surface having a second array of integrally formed protruding members (fins). Furthermore, Kitahara teaches (Fig. 47A, 47B) a two-plate structure for mounting a heat pipe, comprising first and second plate (65, 66) including a first internal surface (of said first plate (65)) having a first array of integrally formed protruding members (fins (67)) and a second internal surface (of said second plate (66)) having a second array of integrally formed protruding members (fins (67)), which mesh with each other so as to form increased area of contact for enhanced heat conductivity (col. 23, lines 17+). Further, Kitahara teaches (Fig. 51, 51A, 51B) a fan mounting structure formed as a low profile plate (75).

It would have been obvious to a person of ordinary skill in the cooling art at the time the invention was made to modify Kitahara's embodiment depicted on Fig. 49 and 50 by utilizing the thin profile fan mounting structure of Fig. 51 having a second internal surface having a second array of integrally formed protruding members (fins) (analogous to what shown on Fig. 47) so as to enable said second array of integrally formed protruding members (fins) to mesh with said first array of integrally formed protruding members (fins (4)) in order to form increased area of thermal contact for improved conduction of heat therebetween (col. 23, lines 17+), thus augmenting the heat flux through the fan mounting structure and enhancing the overall cooling efficiency of the device.

4. Claims 8, 15, and 27, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitahara in view of US/4,923,000 to Nelson.

Regarding claims 8, 15, and 27, Kitahara disclosed all, but the resonate cantilever vibrator.

Nelson disclosed (Fig. 1) a resonate cantilever vibrator employed as a cooling fluid flow generator for a cooling fluid.

Since inventions of Kitahara and of Nelson are from the same field of endeavor (cooling), the purpose of the cantilever vibrator disclosed by Nelson would be recognized in the invention of Kitahara.

It would have been obvious to a person of ordinary skill in the cooling art at the time the invention was made to substitute conventional cooling fan of Kitahara with cantilever vibrator of

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Nelson in order to simplify the device and to enhance the heat transfer characteristics (see Nelson, column 1, lines 1+).

Response to Arguments

5. Applicant's arguments are not persuasive. The gist of the arguments is that "Kitahara fails to disclose or suggest attaching a heat pipe to a housing via clamp as recited in the independent claims of the present application", because allegedly, "there is no disclosure, or suggestion, in Kitahara of the element (56) functioning to bind, constrict or press two or more parts together. Instead, element (56) functions as fitting to support a heat sink". This is not persuasive. Examiner would like to reiterate, that said element (56) shown on Fig. 49 of Kitahara is a clamp, since it clamps the heat pipe between the member (2) and the horizontal surfaces of the grooves (56a) i. e. it binds, constricts, and presses two parts together (i.e. the plate (2) and the heat pipe (55)) to hold them firmly (see Kitahara, column 23, lines 30-44). Specifically, Kitahara states: "the affixing fitting 56 is formed by a material with a good heat conductivity and is provided with pipe holding grooves 56a which PUSH (emphasis added) the fork of the heat pipe 55 upward and affixing legs 56b formed at their top ends with bent flanges 56c. This affixing fitting 56 is affixed to the heat sink 2 by fastening the flanges 56c together with the fan unit 3 to the heat-radiating fins 4 or specially provided support columns positioned at the four corners of the heat sink 2. In this state, the forked portion of the heat pipe 55, not shown, is SANDWICHED (emphasis added) between the top surface of the heat sink 2 and the pipe holding grooves 56a". Examiner directs the Applicant's attention to the fact that "pushing" and "sandwiching" is

tantamount to "binding, constricting and pressing" in this case. There is nothing, but said clamp (fitting) that mounts (clamps) the heat pipe to the heat sink.

Furthermore, the Applicant's statement that "element (56) functioning as a fitting to support a heat sink" (?) is simply incorrect. As it was explained above, the element (56) is functioning to support (clamp) the heat pipe.

Furthermore, Examiner would like to direct the Applicant's attention to the GB/2,293,446 (of record), which teaches a similar (to the fitting plate (56) of Kitahara) grooved fixing plate (4) (Fig. 1), which clamps the heat pipes (2) (see the abstract). This additionally supports the correctness of the Examiner's interpretation of the fitting plate (56) as being a "clamp", since both of the aforementioned plates function similarly.

Furthermore, Examiner would like to reiterate (see body of rejection) that using clamps to mount pipes (and heat pipes in particular) was a well-known technique at the time of the invention. Therefore even if to assume, arguendo, that said element (56) is not a clamp (which it is), than it would have been obvious to one of ordinary skill in the cooling art at the time of the invention to use a clamp to mount the heat pipe of Kitahara, since applying the aforementioned known technique to the Kitahara's device would have yield predictable results (i.e. reliable interconnection and improved thermal contact) and would have been obvious to a person of ordinary skill to try with reasonable expectation of success. *KSR v. Teleflex*, 550 U.S. ___, 127 S. Ct. 1727 (2007).

Furthermore, Applicant contends that "the fitting is not a component of an air duct housing as recited in claim 1". Examiner would like to direct the Applicant's attention to the fact that this language is not present in claim 1. Claim 1 recites only: "a housing having internal fins

and a clamp". The claim is broader than argued. The limitations "a housing [...] having a clamp" are met by Kitahara as recited in the body of the rejection.

Thus, in view of the above, the rejection is believed to be correct and is hereby maintained.

Conclusion

6. Applicant's amendment (filed on 06/20/05) necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anatoly Vortman whose telephone number is 571-272-2047. The examiner can normally be reached on Monday-Thursday, between 10:00 am and 8:30 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Jayprakash Gandhi can be reached on 571-272-3740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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